

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (cancelled)

Claim 2 (currently amended): The liquid separator of claim ~~1~~ 22 wherein ~~the widened~~ a tapered portion of the output passage extends over at least about half of the output passage length.

Claim 3 (currently amended): The liquid separator of claim ~~1~~ 22 wherein the ~~output end of the input passage is arranged to narrow towards the output end of the input passage~~ input passage is formed such that the cross sectional area of the input passage taken generally transverse to a flow direction in the input passage decreases in a tapered manner
5 along the flow direction toward the output end of the input passage in at least a portion of the region between the passages.

Claim 4 (currently amended): The liquid separator of claim 3 wherein ~~the narrowed~~ a tapered portion of the input passage extends over at least about half of the input passage length.

Claim 5 (currently amended): The liquid separator of claim ~~1~~ 3 wherein the cross sectional area profiles of the input and output passages are formed by positioning said wall separating the input and output passages in an angular position with respect to ~~the~~ longitudinal flow directions of the input and output passages.

Claim 6 (currently amended): The liquid separator of ~~claims 1~~ claim 22 wherein ~~the~~ a vacuum means is connected to the output end of the output passage by using a conduit connected without bends to the output end of the output passage.

5 Claim 7 (currently amended): The liquid separator of ~~claims 1-21~~ claim 22 wherein the input passage and the output passage are concentric tubular passages separated from each other by a tubular and conical wall formed of a gas permeable and liquid impermeable material, the conical ~~form narrowing~~ wall tapering toward the output ends of the passages.

Claim 8 (currently amended): The liquid separator of ~~claim 1-21~~ claim 22 wherein the ~~widening~~ tapering angle of the output passage is between the values 30 degrees and 0.5 degrees; ~~preferably less than 20 degrees and more than 3 degrees.~~

Claim 9 (currently amended): The liquid separator of ~~claim 1-21~~ claim 22 wherein the liquid separator ~~comprises~~ includes a liquid receiving means, which is connected to the output end of the input passage for ~~conducting~~ receiving the second portion of the gas and the liquid ~~to~~ in the liquid receiving means.

Claim 10 (cancelled)

Claim 11 (currently amended): The liquid separator of ~~claim 10-23~~ claim 24 wherein ~~the narrowed~~ a tapered portion of the input passage extends over at least about half of the input passage length.

Claim 12 (currently amended): The liquid separator of ~~claim 10-23~~ claim 24 wherein the ~~narrowing~~ tapering angle of the input passage is between the values 30 degrees and 0.5 degrees; ~~preferably less than 20 degrees and more than 3 degrees.~~

Claim 13 (currently amended): The liquid separator of ~~claim 10-23~~ claim 24 wherein the liquid separator ~~comprises~~ includes a liquid receiving means, which is connected to the output

end of the input passage for ~~conducting~~ receiving the second portion of the gas and the liquid ~~to~~ in the liquid receiving means.

Claim 14 (cancelled)

Claim 15 (currently amended): The method of claim ~~14~~ 26 wherein the profile of the gas velocity along ~~the~~ an input end portion of the output passage is arranged to be approximately similar to the profile of the gas velocity along ~~the~~ an input end portion of the input passage.

Claim 16 (currently amended): The method of claim ~~14~~ 26 wherein the profile of the gas velocity along ~~the~~ an output end portion of the input passage is arranged to be approximately similar to the profile of the gas velocity along ~~the~~ an output end portion of the output passage.

Claim 17 (currently amended): The liquid separator of claim 2 wherein the ~~output end of the input passage is arranged to narrow towards the output end of the input passage~~ input passage is formed such that the cross sectional area of the input passage taken generally transverse to a flow direction in the input passage decreases in a tapered manner along the
5 flow direction toward the output end of the input passage in at least a portion of the region between the passages.

Claim 18 (currently amended): The liquid separator of claim 17 wherein the ~~narrowed tapered~~ tapered portion of the input passage extends over at least about half of the input passage length.

Claim 19 (currently amended): The liquid separator of ~~claims~~ claim 5 wherein ~~the~~ a vacuum means is connected to the output end of the output passage by using a conduit connected without bends to the output end of the output passage.

Claim 20 (currently amended): The liquid separator of ~~claims~~ claim 3 wherein the input passage and the output passage are concentric tubular passages separated from each other by a tubular and conical wall formed of a gas permeable and liquid impermeable material, the conical ~~form narrowing~~ wall tapering toward the output ends of the passages.

Claim 21 (currently amended): The liquid separator of ~~claims~~ claim 4 wherein the input passage and the output passage are concentric tubular passages separated from each other by a tubular and conical wall formed of a gas permeable and liquid impermeable material, the conical ~~form narrowing~~ wall tapering toward the output ends of the passages.

Claim 22 (new): A liquid separator for removing liquid from a gas to be analyzed in a gas analyzer, said liquid separator comprising:

an input passage having an input end to which a gas sample containing liquid is supplied, the input passage having an output end;

5 an output passage having a first end and a second, output end; and

a wall formed of a gas permeable and liquid impermeable material separating the input passage and the output passage in a region along the passages and lying between the ends of the passages, a first portion of the gas passing through said wall from the input passage to the output passage for discharge from the output end of the output passage as the
10 gas to be analyzed, a second portion of the gas sample and the liquid remaining in the input passage for discharge from the output end of the input passage;

the output passage being formed such that the cross sectional area of the output passage taken generally transverse to a flow direction in the output passage increases

15 in a tapered manner along the flow direction toward the output end of the output passage in
at least a portion of the region along the passages.

Claim 23 (new): The liquid separator of claim 8 wherein the tapering angle of the output passage is more than 3 degrees but less than 20 degrees.

Claim 24 (new): A liquid separator for removing liquid from a gas to be analyzed in a gas analyzer, said liquid separator comprising:

5 an input passage having an input end to which a gas sample containing liquid is supplied, the input passage forming a gas flow passage in said separator and having an output end;

an output passage having a first end and a second, output end; and

10 a wall formed of a gas permeable and liquid impermeable material separating the input passage and the output passage in a region along the passages and lying between the ends of the passages, a first portion of the gas passing through said wall from the input passage to the output passage for discharge from the output end of the output passage as the gas to be analyzed, a second portion of the gas sample and the liquid remaining in the input passage for discharge from the output end of the input passage;

15 the input passage being formed such that the cross sectional area of the input passage taken generally transverse to a flow direction in the input passage decreases in a tapered manner along the flow direction toward the output end of the input passage in at least a portion of the region along the passages.

Claim 25 (new): The liquid separator of claim 12 wherein the tapering angle of the input passage is more than 3 degrees but less than 20 degrees.

Claim 26 (new): A method for separating a liquid component from gas to be analyzed in a gas analyzer, said method comprising the steps of:

dividing the gas into two components by using an input passage having an input end receiving gas to be analyzed and an output end; an output passage having a first
5 end and a second, output end; and a gas permeable and liquid impermeable wall separating said two passages, one part of the gas flowing from the input passage through the wall to the output passage for supply to a gas analyzer at the output end of the output passage, another part of the gas, as well as liquid, remaining in the input passage for discharge away from the gas analyzer at the output end of the input passage; and

10 flowing gas in the passages such that the profile of the gas velocity along at least a portion of the output passage and the profile of the gas velocity along at least a corresponding portion of the input passage are approximately similar.